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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,007	06/15/2001	Yingqiu Jiang	0127/1101.019	9663

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REVEO, INC.
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EXAMINER	
SEFER, AHMED N	

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/883,007	JIANG ET AL.	
	Examiner	Art Unit	
	A. Sefer	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/28/04 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5 and 7-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Murai et al. ("Murai") USPN 5,959,707.

Murai discloses in figs. 14-24 a cholesteric liquid crystal (twistic nematic) polarizing device comprising: a substrate 23/33 or glass (as in claim 11); an alignment layer 21/31 or polymide (as in claim 12); and a cholesteric liquid crystal layer including multiple domains A/B skewed at distribution angles (as in claim 4) and including a plurality of sub-domains, said sub-domains being disposed within a distribution of angles relative to said at least one domain (as in

claim 3) and, each of said domains skewed at an angle relative to a plane parallel to said substrate or skewed at a substantially uniform angle (as in claim 2).

As for claim 5, Murai discloses a plurality pixel regions -- fig. 16 shows a liquid crystal layer within a single pixel.

As to claim 13, Murai discloses an LCD including the CLC polarizing device.

As to claims 7 and 8, the specification contains no disclosure of either the critical nature of the claimed arrangement or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Claims 9 and 10 refer to a method of production and "product by process" claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murai in view of Ma ("Ma") USPN 5,796,454.

Murai discloses the device structure as recited in the claim, but does not specifically disclose pixel regions arranged in a repeating array of different colors.

Ma discloses (see figs. 5 and 7 and col. 4, lines 30-34 and col. 9, lines 59-67, col. 10, lines 1-13 and abstract) a cholesteric LCD comprising monochromatic device (as in claim 14) wherein pixel regions are arranged in a repeating array of red pixels, green pixels and blue pixels, said red pixels reflecting circularly polarized red light, said green pixels reflecting circularly polarized green light and said blue pixels reflecting circularly polarized blue light.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Ma's teachings with Murai's device since that would increase the contrast ratio of the LCD as taught by Ma.

7. Claims 15-18 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willet et al. ("Willet") USPN 5,325,218 in view of Murai.

Willet discloses in fig. 2 a reflective liquid crystal display comprising: a planar cholesteric liquid crystal polarizing device; a liquid crystal cell 20; and an internal quarter-wave retarder 30; said cholesteric liquid crystal polarizing device, said liquid crystal cell, and said quarter wave retarder being superposed with one another, but omits a cholesteric liquid crystal polarizing device, including multiple domains, each of said domains skewed at an angle relative to a plane parallel to the cholesteric LCD.

Murai discloses in figs. 14-24 a cholesteric liquid crystal polarizing device including multiple domains skewed at a substantially uniform angle (as in claim 16) or skewed at

distribution angles (as in claim 18) and including a plurality of sub-domains, said sub-domains being disposed within a distribution of angles relative to said at least one domain (as in claim 17), each of said domains skewed at an angle relative to a plane parallel to the cholesteric LCD.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Murai's teachings with Willet's device since that would provide a superior visual angle characteristics as taught by Murai.

As to claims 25 and 26, the specification contains no disclosure of either the critical nature of the claimed arrangement or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Claim 27 refers to a method of production and "product by process" claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

8. Claims 19-23, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willet in view of Murai as applied to claim 15 above, and further in view of Ma.

The combined references disclose the device structure as recited in the claim, but do not specifically disclose pixel regions arranged in a repeating array of different colors.

Ma discloses (see figs. 5 and 7 and col. 4, lines 30-34 and col. 9, lines 59-67, col. 10, lines 1-13 and abstract) a cholesteric LCD, wherein pixel regions are arranged in a repeating array of red pixels, green pixels and blue pixels, said red pixels reflecting circularly polarized red light, said green pixels reflecting circularly polarized green light and said blue pixels reflecting circularly polarized blue light.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Ma's teachings with the device of Willet and Murai since that would increase the contrast ratio of the LCD as taught by Ma.

As for claims 19 and 20, Ma discloses (see fig. 6 and col. 10 14-62) a normally white and a normally black mode device.

Ma's reference (see fig. 3 and col. 4, lines 21-29) reads into claims 21 and 22.

As for claims 28 and 29, Ma discloses (see fig. 2 and claim 14) a cell 210 comprising a twisted agent (as in claim 28) and a polarizer and absorbing medium 260 (as in claim 29).

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Willet in view of Murai as applied to claim 15 above, and further in view of Okumura et al. ("Okumura") USPN 5,796,447.

The combined references disclose the device structure as recited in the claim, but do not specifically disclose a cholesteric liquid crystal comprising a plurality of pixel regions, which are in registration with a plurality of pixel regions of a TFT array.

Okumura discloses in figs. 1, 8 and 12 a cholesteric liquid crystal display including a TFT array having a plurality of pixel regions; and said plurality of pixel regions of said TFT

array are in registration with said plurality of pixel regions of said cholesteric liquid crystal device.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Okumura's teachings since that would prevent degradation in display image quality.

10. Claims 30, 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willet in view of Murai and Ma.

Willet discloses in fig. 2 a reflective liquid crystal display comprising: a planar cholesteric liquid crystal polarizing device; a liquid crystal cell 20; and an internal quarter-wave retarder 30; said cholesteric liquid crystal polarizing device, said liquid crystal cell, and said quarter wave retarder being superposed with one another, but omits a cholesteric liquid crystal polarizing device, including multiple domains, each of said domains skewed at an angle relative to a plane parallel to the cholesteric LCD and an absorbing medium.

Murai discloses in figs. 14-23 a cholesteric liquid crystal polarizing device including multiple domains skewed at an angle relative to a plane parallel to the cholesteric LCD.

Ma discloses (see fig. 2 and claim 14) a cholesteric device comprising a liquid crystal cell 210 comprising a twisted agent (as in claim 33) and an absorbing medium 260.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Murai's teachings with Willet's device since that would provide a superior visual angle characteristics as taught by Murai. It would have been obvious to employ an absorbing medium, since that would reduce a heat build-up.

As for claim 31, Murai discloses a plurality pixel regions -- fig. 16 shows a liquid crystal layer within a single pixel.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Willet in view of Murai and Ma as applied to claim 30 above, and further in view of Okumura.

The combined references disclose the device structure as recited in the claim, but do not specifically disclose a cholesteric liquid crystal comprising a plurality of pixel regions, which are in registration with a plurality of pixel regions of a TFT array.

Okumura discloses in figs. 1, 8 and 12 a cholesteric liquid crystal display including a TFT array having a plurality of pixel regions; and said plurality of pixel regions of said TFT array are in registration with said plurality of pixel regions of said cholesteric liquid crystal device.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Okumura's teachings since that would prevent degradation in display image quality.

12. Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willet in view of Murai and Ma as applied to claim 30 above, and further in view of Van Haaren et al. ("Van Haaren") USPN 5,737,044.

The combined references disclose a cholesteric LCD device structure as recited in the claim including black mode device and white mode device (see Ma fig. 6, col. 6, lines 38-67 and col. 10, lines 14-62), said cholesteric polarizing device reflecting left-hand or right-hand circularly polarized light, but fail to disclose a retarder oriented at 45 degrees.

Van Haaren discloses (see col. 7, lines 1-5) a retarder oriented at 45 degrees to a polarization direction.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Van Haaren's teachings since that would provide low viewing-angle dependence.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Doane et al. USPN 5,691,795 disclose a phase-separated polymeric-liquid crystalline display device.

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS
September 15, 2004